

Table 3-8d
Development of Risk-Based Concentrations for Non-Tidal Wetland Sediment
Mallard - Non-Breeding
Investigation Area H1 Feasibility Study
Mare Island, Vallejo, California

$$RBC_{\text{sediment}} = BW \times TRV \times HQ / [(IR_{\text{prey}} \times BAF_1) + IR_{\text{sediment}}] \times SUF]$$

COEC ^a	Wetland Plant Tissue BAF ^b	TRV (mg/kg BW-day)		RBC-Sediment (mg/kg)	
		Low	High	TRV-Low	TRV-High
Inorganics					
Aluminum	7.56E-03	109.7	1,097	276075	2760746
Antimony	2.27E-01	NTV	NTV	--	--
Arsenic	1.15E-01	5.5	22	3785	15141
Barium	7.87E-02	20.8	41.7	19008	38107
Cadmium	1.40E+00	0.08	10.4	5.7	743
Chromium	--	2.66	2.78	8228	8600
Copper	5.68E-02	2.3	52.3	2613	59428
Lead	7.51E-03	0.014	8.75	35.3	22051
Manganese	4.89E-01	77.6	776	15175	151748
Mercury	--	0.039	0.18	121	557
Nickel	1.39E-02	1.38	56.3	3004	122568
Selenium	--	0.23	0.93	711	2877
Tin	1.55E+00	6.8	16.9	437	1087
Vanadium	2.20E-02	11.4	114	21143	211430
Zinc	8.47E-02	17.2	172	14922	149219
Organics					
PCBs	1.09E-01	0.09	1.27	64.6	911
Anthracene	1.89E+00	NTV	NTV	--	--
Benzo(a)anthracene	--	NTV	NTV	--	--
Benzo(a)pyrene	--	0.001	0.01	3.1	30.9
Benzo(b)fluoranthene	--	NTV	NTV	--	--
Benzo(ghi)perylene	--	NTV	NTV	--	--
Benzo(a)fluoranthene	--	NTV	NTV	--	--
Chrysene	--	NTV	NTV	--	--
Fluoranthene	1.17E+00	NTV	NTV	--	--
Indeno(1,2,3cd)pyrene	--	NTV	NTV	--	--
Phenanthrene	1.64E+00	NTV	NTV	--	--
Pyrene	--	NTV	NTV	--	--

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Exposure Assumptions and Equation:^c

	Value	Units	
IRprey(dry wt.) =	0.0917	kg/day (dry weight)	-- = Not available
IRplant(dry wt.) ^d =	0.0917	kg/day (dry weight)	NTV = No toxicity value
IRsediment (dry wt.) ^e =	0.00303	kg-day (dry weight)	
Tissue Moisture (plant) ^d =	8.5%	percent	
Site Use Factor ^f =	10%	percent	
Body Weight =	0.9361	kg	
Hazard Quotient (HQ) =	1	unitless	

Notes:

- a - Constituent of ecological concern.
- b - Dry weight basis plant BAFs presented in Table 3-6b.
- c - Exposure parameters used to calculate risk are discussed in detail in the BERA.
- d - The wet weight tissue concentrations are converted to dry weight by dividing by 1 - tissue moisture.
- Ingestion rate of sediment based on 3.3 percent of the prey ingestion rate (dry weight); based on mallard (Beyer et al. (1994).
- f - Site use factor was based on a 10% use of the site for the mallard's foraging range.